as occurring farther north than Denver, Colo. (lat. 39° 40′ 36″ N.); nor do I know of any previous record of their having been found in Utah.

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THE GOVERNMENT OF AMERICAN UNIVERSITIES

THE articles under the above caption by Professors Jastrow and Creighton in recent issues of this journal are timely contributions to one of the most important problems now engaging the attention of American educators. That interest in it is widespread, I am assured by personal conversation with representatives of college faculties from all sections of the union east of the Mississippi River.

About two years ago, local conditions forced the faculty of the Randolph-Macon Woman's College to adopt some means of conserving the scholarly status of the institution and of safeguarding the instructor's pedagogic liberty. A committee, appointed for the purpose, drafted a constitution for the college, which, after undergoing certain modifications suggested in conference with the president and board of trustees, was adopted by the board at its session in June of the current year. Its essential features are the following items, of which I would call particular attention to the fifth, sixth and seventh:

1. The fields of instruction which are at present recognized as distinct shall be constituted departments.

2. The senior professor in each field shall be head of the department, given its entire control, and held responsible for results.

3. The following grades shall be established in the instructional staff: (*a*) professor and head of department, (*b*) associate professor, (*c*) adjunct professor, (*d*) instructor, (*e*) assistant.

4. The president shall nominate heads of departments.

5. The heads of departments shall nominate their subordinates.

6. All questions affecting the educational policy of the institution shall be presented to the executive committee upon resolution of the faculty.

7. Only heads of departments may vote on questions affecting the educational policy of the college.

8. All members of the faculty except instructors and assistants may vote on questions of routine business.

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SCIENTIFIC BOOKS

Canada Department of Mines, Geological Survey Branch. Catalogue of Canadian Birds. By JOHN MACOUN, Naturalist to the Geological Survey, Canada, and JAMES M. MACOUN, Assistant Naturalist to the Geological Survey, Canada. Ottawa, Government Printing Bureau. 1909. Pp. viii + 761 + xviii.

This excellent piece of technical work is essentially a compend of known facts concerning the distribution and breeding habits of the birds of the Dominion of Canada, Newfoundland, Greenland and Alaska—of all America, in short, north of the main northern boundary of the United States. It is a second edition, largely rewritten and considerably expanded, of the well-known "Catalogue of Canadian Birds," prepared by John and James M. Macoun, father and son, and first published in three installments between 1900 and 1904. An important part of the contents of this volume is the product of field observations by the authors and by Mr. Wm. Spreadborough, made during many years of service on the Geological Survey of Canada, those of the senior author beginning in 1879, of the junior Macoun in 1885, and of Spreadborough in 1889. With their personal notes have been incorporated all pertinent data from the published work of other naturalists, and from manuscript lists and notes of more than a score of observers whose materials have been placed at the disposal of the compilers.

The plan of the work is extremely simple and unassuming. Preceded by no introductory discussion, and followed by no general summary, the catalogue begins at once with a discussion of the species, giving for each, in systematic succession, without descriptive matter, the details of its Canadian distribution, both geographical and ecological, its movements in migration, and its breeding habits, with descriptions of nests and frequently of eggs. The precise authority for observations reported is carefully given. Seven hundred and sixty-eight species are

discussed, representing two hundred and eighty-eight genera and fifty-five families.

Students of Canadian birds are fortunate in the possession of this cyclopedia of comprehensive and accurate information. It is scarcely less interesting and valuable to the ornithologists of the United States, who will find in it a larger mass and greater detail of reliable matter concerning many of our species than is to be found in any other like publication. It is a methodical, careful record of data of observation, simply and clearly written, for the compilation of which the authors deserve the gratitude of all students of American ornithology.

Stephen A. Forbes

Weitere experimentelle Untersuchungen über Artveränderung, speziel über das Wesen quantitativer Artuntershiede bei Daphniden. By R. Woltereck, Vehr. der Deutschen Zool. Gesellsch. 1909. Pp. 110–172, 18 text figures.

Dr. Woltereck has selected the very variable *longispina* group of *Daphnias* for his studies in variation and heredity and the results on which the paper is based were obtained in experiments covering a period of three years. The plan of the investigation embraces a study of four problems: (1) The cause, extent and character of the variations in this group of crustaceans; (2) the characters possessed by hybrids resulting from the crossing of two elementary species; (3) whether a pure culture biotype can be changed through the selection of extreme variants; (4) whether and how much a long-continued exposure to a particular environmental condition will change the characteristics of a biotype hereditarily.

So far the experiments have been confined mainly to the first problem and attention has been directed chiefly to two characters, the length of the helmet and sexuality. The author found that the length of the helmet is dependent primarily on the quantity of food (an external factor) and the number of the generation (an internal factor). Indirectly also it is affected by the temperature of the water through its influence on assimilation and body activities. The length is directly proportional to food assimilation and is not affected directly by other external factors such as salt or gas content of the water, light or temperature. With respect to the internal factor, the first generations produced by ephippial eggs have small helmets but, under the same food conditions, later generations will have larger helmets. This seems to show the presence of a "Helmhöhepotenz" which has become hereditarily fixed so that the size of the helmet may be modified by food conditions, but it can not be entirely controlled by this factor. No mutations were observed.

Concerning sexuality, it was found that the sexual stage might be postponed for several generations (ten to twelve) but it was not possible to postpone this stage indefinitely in all individuals. In some cases it became obligatory in all individuals, while in other instances it became only partial and facultative. The parthenogenetic stage was found to be obligatory in all generations.

Dr. Woltereck also studied two regressive characters, the pigment fleck (Nebenauge) and the dorsal shell teeth. Some individuals, especially those belonging to the earlier generations, possessed a rather large pigment fleck while this character was entirely absent in individuals belonging to later generations. At first this was supposed to be a mutation but further study revealed the presence of a number of intermediate stages, thus showing a continuous variation. Environment did not seem to affect the variability of this character.

The dorsal teeth also showed a continuous variation in size, in position, and in heritability. Through selection the number of individuals possessing these teeth was raised to 50 per cent. in the third generation. This character was affected by a marked change in the temperature of the water. If a female having ripe eggs in her ovary were suddenly transferred from water having a temperature of 25° to water at 12° and kept at this temperature, the young produced by these eggs possessed dorsal teeth.

One series of experiments is concerned with